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09/544,274	04/06/2000	Joseph Mulavelil George	AUS000185US1	7599

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EXAMINER	
LY, ANH	

ART UNIT	PAPER NUMBER
2172	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/544,274	Applicant(s) GEORGE, JOSEPH MULAVELIL	
	Examiner Anh Ly	Art Unit 2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 11-12, 20, 27, 35 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,047,284 issued to Owens et al. (hereinafter Owens).

With respect to claim 1, Owens discloses a method of deleting object data from a relational database, comprising: determining a structure of the relational database (col. 12, lines 3-5); determining a delete action based on the structure of the relational database (col. 11, lines 37-43 and lines 54-65); generating database modification commands based on the determined delete action (col. 11, lines 54-65 and col. 12, lines 1-20); and sending the database modification commands to a relational database server, wherein the relational database server deletes the object data from the relational database based on the database modification commands (see fig. 6 and fig. 12, col. 1, lines 12-25, col. 2, lines 22-32, col. 5, lines 38-59, col. 8, lines 18-30 and col. 11, lines 54-65).

Owens does not clearly disclose, "generating database modification commands based on the determined delete action." But, however, Owens shows the object server generates the appropriate SQL calls to delete the data in the relational database (col. 11, lines 55-60). Therefore, it would have been obvious to one of ordinary skill in the art

at the time the invention was made to employ the teachings of Owens such as relational database structure, delete action and database modification commands so as to obtain a method of deleting object data from a relational database (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claim 11, Owens discloses wherein the database modification commands are Structured Query Language (SQL) statements (see fig. 16A and 16B, col. 14, lines 12-67, col. 15, lines 1-16 and col. 18, lines 1-14).

Claim 12 is essentially the same as claim 1 except that it is directed to a system rather than a method (data processor: fig 2, item 51, col. 4, lines 55-67 and col. 5, lines 1-10; col. 12, lines 3-5; col. 11, lines 37-43 and lines 54-65; col. 11, lines 54-65 and col. 12, lines 1-20; see fig. 6 and fig. 12, col. 1, lines 12-25, col. 2, lines 22-32, col. 5, lines 38-59, col. 8, lines 18-30 and col. 11, lines 54-65), and is rejected for the same reason as applied to the claim 1 hereinabove.

With respect to claim 20, Owens discloses a method of generating a class for deletion of data representations of objects in a relational database, comprising: determining a structure of the relational database; determining one or more delete actions based on the structure of the relational database; and generating the class object based on the determined structure and the determined one or more delete actions (col. 12, lines 3-5; col. 11, lines 37-43 and lines 54-65; col. 11, lines 54-65 and col. 12, lines 1-20; see fig. 6 and fig. 12, col. 1, lines 12-25, col. 2, lines 22-32, col. 5,

lines 38-59, col. 8, lines 18-30 and col. 11, lines 54-65; col. 8, lines 18-54 and col. 11, lines 17-42).

Owens does not clearly disclose, "generating the class object based on the determined structure and determined one or more delete actions." But, however, Owens shows the object server generates the appropriate SQL calls to delete the data in the relational database (col. 8, lines 18-54 and col. 11, lines 17-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Owens such as relational database structure, delete action and database modification commands so as to obtain a method of deleting object data from a relational database (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claim 27 is essentially the same as claim 20 except that it is directed to a system rather than a method (col. 12, lines 3-5; col. 11, lines 37-43 and lines 54-65; col. 11, lines 54-65 and col. 12, lines 1-20; see fig. 6 and fig. 12, col. 1, lines 12-25, col. 2, lines 22-32, col. 5, lines 38-59, col. 8, lines 18-30 and col. 11, lines 54-65; col. 8, lines 18-54 and col. 11, lines 17-42), and is rejected for the same reason as applied to the claim 20 hereinabove.

Claim 35 is essentially the same as claim 20 except that it is directed to a computer product rather than a method (col. 12, lines 3-5; col. 11, lines 37-43 and lines 54-65; col. 11, lines 54-65 and col. 12, lines 1-20; see fig. 6 and fig. 12, col. 1, lines 12-25, col. 2, lines 22-32, col. 5, lines 38-59, col. 8, lines 18-30 and col. 11, lines 54-65;

col. 8, lines 18-54 and col. 11, lines 17-42), and is rejected for the same reason as applied to the claim 20 hereinabove.

With respect to claim 46, Owens discloses a method of generating a class for deletion of data representations of objects in a relational database, comprising: determining a structure of the relational database; determining one or more default delete actions based on the structure of the relational database; receiving user input to modify the one or more default delete actions; and generating the class object based on the determined structure, the determined one or more delete actions and the user input (col. 12, lines 3-5; col. 11, lines 37-43 and lines 54-65; col. 11, lines 54-65 and col. 12, lines 1-20; see fig. 6 and fig. 12, col. 1, lines 12-25, col. 2, lines 22-32, col. 5, lines 38-59, col. 8, lines 18-30 and col. 11, lines 54-65; col. 8, lines 18-54 and col. 11, lines 17-42; col. 1, lines 58-67, col. 3, lines 1-16, col. 13, lines 17-49 and col. 16, lines 12-31).

Owens does not clearly disclose, "generating the class object based on the determined structure and determined one or more delete actions." But, however, Owens shows the object server generates the appropriate SQL calls to delete the data in the relational database (col. 8, lines 18-54 and col. 11, lines 17-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Owens such as relational database structure, delete action and database modification commands so as to obtain a method of generating a class for deletion of data representations of objects in a relational database (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

3. Claims 2-3, 7-8, 13-14, 17, 21, 24, 28, 31-32, 36, 39-40 and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,047,284 issued to Owens et al. (hereinafter Owens) in view of US Patent 6,199,195 issued to Goodwin et al. (hereinafter Goodwin).

With respect to claims 2-3 and 7-8, Owens discloses a method of deleting object data from a relational database as discussed in claim 1.

Owens does not explicitly indicate, "wherein determining the structure of the relational database includes invoking a database meta-information class object associated with the relational database and wherein the database meta-information class object encapsulates a dependency structure of the relational database and wherein the file is an Extended Markup Language file."

However, Goodwin discloses meta data or meta information class object as claimed (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52) and a kind of XML such as UML as claimed (col. 4, lines 22-30, col. 6, lines 37-51, see fig. 3, and col. 8, lines 42-62).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of

object from an object-relational system in a customizable and database independent manner environment.

Claims 13-14 are essentially the same as claims 2-3 except that it is directed to a system rather than a method (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52), and is rejected for the same reason as applied to the claims 2-3 hereinabove.

Claim 17 is essentially the same as claim 7 except that it is directed to a system rather than a method (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52), and is rejected for the same reason as applied to the claim 7 hereinabove.

With respect to claim 21, Owens discloses a method of generating a class for deletion of data representations of objects in a relational database as discussed in claim 20.

Owens does not explicitly indicate, "wherein generating the class object includes encapsulating information identifying the structure of the relational database and the one or more 25 delete actions."

However, Goodwin discloses meta data or meta information class object as claimed (col. 1, lines 12-67, col. 2, lines 12-67 and col. 4, lines 1-52).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have multiple SQL calls that

may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claim 24, Owens discloses a method of generating a class for deletion of data representations of objects in a relational database as discussed in claim 20.

Owens does not explicitly indicate, "wherein the structure of the relational database and the one or more delete actions are determined from a file describing the structure and delete actions for tables in the relational database."

However, Goodwin discloses meta data or meta information class object as claimed (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claim 28 is essentially the same as claim 21 except that it is directed to a system rather than a method (col. 1, lines 12-67, col. 2, lines 12-67 and col. 4, lines 1-52), and is rejected for the same reason as applied to the claim 21 hereinabove.

Claim 31 is essentially the same as claim 24 except that it is directed to a system rather than a method (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52), and is rejected for the same reason as applied to the claim 24 hereinabove.

With respect to claim 32, Owen discloses an apparatus for generating a class object as discussed in claim 27.

Owen does not explicitly indicate, "further comprising means for generating the file, wherein the file is generated based on Java Database Connectivity (JDBC) database metadata associated with the relational database."

However, Goodwin discloses JDBC as claimed (col. 1, lines 60-67 and col. 2, lines 21-56).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claim 36 is essentially the same as claim 21 except that it is directed to a computer program product rather than a method (col. 1, lines 12-67, col. 2, lines 12-67 and col. 4, lines 1-52), and is rejected for the same reason as applied to the claim 21 hereinabove.

Claim 39 is essentially the same as claim 24 except that it is directed to a computer product rather than a method (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52), and is rejected for the same reason as applied to the claim 24 hereinabove.

Claim 40 is essentially the same as claim 32 except that it is directed to a computer product rather than an apparatus (col. 1, lines 60-67 and col. 2, lines 21-56), and is rejected for the same reason as applied to the claim 32 hereinabove.

With respect to claim 43, Owens discloses generating a class object for deletion of data representations of objects in a relational data one or more delete actions based on the structure of the relational database (col. 11, lines 29-65).

Owens does not explicitly indicate, "a meta-information class for determining a structure of the relational database and one or more delete actions based on the structure of the relational database; and a database meta-information generator class for generating the class object based on the determined structure and the determined one or more delete actions."

However, Goodwin discloses meta-information class as claimed (col. 9, lines 65-67, col. 10, lines 1-67, col. 11, lines 1-67, col. 12, lines 1-67, col. 13, lines 1-5 and col. 17, lines 30-50).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to have a computer program product in a computer readable medium for generating a class object for deletion of data representations of objects in a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claim 44, Owen discloses a computer program product as discussed in claim 43.

Owens does not explicitly indicate, "wherein the database meta-information generator class encapsulates information identifying the structure of the relational database and the one or more delete actions into the class object."
However, Goodwin discloses meta data or meta information class object as claimed (col. 12, lines 58-67 and col. 12, lines 1-19; col. 1, lines 12-67, col. 2, lines 1-50 and col. 4, lines 1-52) and a kind of XML such as UML as claimed (col. 4, lines 22-30, col. 6, lines 37-51, see fig. 3, and col. 8, lines 42-62).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to have a computer program product in a computer readable medium for generating a class object for deletion of data representations of objects in a

relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

4. Claims 4-6, 9-10, 15-16, 18-19, 22-23, 25-26, 29-30, 33-34, 37-38, 41-42 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,047,284 issued to Owens et al. (hereinafter Owens) in view of US Patent 6,199,195 issued to Goodwin et al. (hereinafter Goodwin), and further in view of US Patent No. 4,947,320 issued to Crus et al. (hereinafter Crus).

With respect to claims 4-6, Owens in view of Goodwin discloses a method of deleting object data from a relational database as discussed in claim 1.

Owens in view of Goodwin does not explicitly indicate, "wherein the database meta-information class object further includes a delete action identifier for each dependent table of a plurality of tables in the relational database; wherein the delete action identifier is one of cascade delete and nullify columns delete and wherein the delete action is one of cascade delete and nullify columns delete."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete as claimed (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens in view of Goodwin with the teachings of Crus so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claims 9-10, Owens in view of Goodwin discloses a method of deleting object data from a relational database as discussed in claim 1.

Owens in view of Goodwin does not explicitly indicate, " wherein the file is further generated based on user input to override default delete action identifiers in the file and wherein the file is further generated based on user input to insert one or more delete constraints in the file for one or more of the tables in the relational database."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete and delete constraints as claimed (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens in view of Goodwin with the teachings of Crus so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have

multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claims 15-16 are essentially the same as claims 4-5 except that it is directed to a system rather than a method (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 4-5 hereinabove.

Claims 18-19 are essentially the same as claims 9-10 except that it is directed to a system rather than a method (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 9-10 hereinabove.

With respect to claims 22-23, Owens in view of Goodwin discloses a method of generating a class for deletion of data representations of objects in a relational database as discussed in claim 20.

Owens in view of Goodwin does not explicitly indicate, "wherein the one or more delete actions is at least one of cascade delete and nullify columns delete and wherein the one or more delete actions is at least one of cascade delete and nullify columns delete."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete as claimed (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens in view of Goodwin with the teachings of Crus so as to obtain a method of deleting object data from a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claims 25-26, Owens in view of Goodwin discloses a method of generating a class for deletion of data representations of objects in a relational database as discussed in claim 20.

Owens in view of Goodwin does not explicitly indicate, "wherein the file is further generated based on user input to override default delete action identifiers in the file and wherein the file is further generated based on user input to insert one or more delete constraints in the file."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete and delete constraints as claimed (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens in view of Goodwin with the teachings of Crus so as to obtain a method of deleting object data from a

relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claims 29-30 are essentially the same as claims 22-23 except that it is directed to a system rather than a method (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 22-23 hereinabove.

Claims 33-34 are essentially the same as claims 25-26 except that it is directed to a system rather than a method (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 25-26 hereinabove.

Claims 37-38 are essentially the same as claims 22-23 except that it is directed to a computer program product rather than a method (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 22-23 hereinabove.

Claims 41-42 are essentially the same as claims 25-26 except that it is directed to a computer program product rather than a method (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 25-26 hereinabove.

With respect to claim 45, Owen discloses a computer program product as discussed in claim 43.

Owens does not explicitly indicate, "wherein the one or more delete actions is at least one of cascade delete and nullify columns delete."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete as claimed (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Goodwin so as to have a computer program product in a computer readable medium for generating a class object for deletion of data representations of objects in a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

5. Claims 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,047,284 issued to Owens et al. (hereinafter Owens) in view of US Patent No. 4,947,320 issued to Crus et al. (hereinafter Crus).

With respect to claims 47-48, Owens discloses a method of generating a class as discussed in claim 46.

Owens does not explicitly indicate, "wherein the user input overrides one or more of the one or more default delete actions and wherein the user input inserts one or more delete action constraints. "

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete and delete constraints as claimed (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Owens with the teachings of Crus so as to obtain a method of generating a class for deletion of data representations of objects in a relational database because the combination would provide the method that have multiple SQL calls that may be necessary to delete an object from the relational database tables are performed as one atomic operation (col. 11, lines 37-65 and see fig. 6 and fig. 12) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Contact Information

6. Any inquiry concerning this communication should be directed to Anh Ly whose telephone number is (703) 306-4527. The examiner can be reached on Monday - Friday from 8:00 AM to 4:00 PM.

If attempts to reach the examiner are unsuccessful, see the examiner's supervisor, Kim Vu, can be reached on (703) 305-4393.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 746-7238 (after Final Communication)

or:

(703) 746-7239 (for formal communications intended for entry)

or:

(703) 746-7240 (for informal or draft communications, or Customer Service Center, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Inquiries of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

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May 7th, 2002.

SHAHID AL ALAM
PATENT EXAMINER